Supreme Court, U.S.
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No. 00-

IN THE

Supreme Court of the United States

RIVERWOOD INTERNATIONAL CORPORATION,

Petitioner,

v.

THE MEAD CORPORATION,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

WELLINGTON M. MANNING, JR.
Counsel of Record
TIM F. WILLIAMS
DORITY & MANNING, P.A.
Attorneys for Petitioner
700 East North Street, Suite 15
Greenville, South Carolina 29601
(864) 271-1592

162176

Counsel Press LLC
(800) 274-3321 • (800) 359-6859

8/6pp

QUESTIONS PRESENTED

On remand from this Court in 1987, the Federal Circuit held in *Panduit Corp. v. Dennison Manufacturing Co.*, 810 F.2d 1561, *cert. denied*, 481 U.S. 1052 (1987) that in reviewing a judgment invalidating a United States patent for obviousness, the Federal Circuit must consider not only whether there is error in the legal conclusion of obviousness but also *must* review the underlying findings of fact. The Federal Circuit issued this opinion on direction from the Supreme Court to explicitly set forth the proper scope of review for the obviousness determination under 35 U.S.C. § 103. *Dennison Manufacturing Co. v. Panduit Corp.*, 475 U.S. 809 (1986). Thus, the questions presented here are:

Whether the Federal Circuit erred by invalidating petitioner's patent as obvious without undertaking the required review of the underlying findings of fact and without even acknowledging petitioner's assertion of numerous clear errors in those findings that would require upholding the district court's conclusion that the patent was not invalid for obviousness?

Whether a court of appeals may deny a party that prevailed in the district court from an opportunity to be heard on clear errors in the findings of fact underlying the district court's judgment, where such party was precluded, as prevailing party, from appealing the district court's judgment, and where appellate review of such findings of fact would require affirming the district court's judgement?

CORPORATE DISCLOSURE STATEMENT

Petitioner Riverwood International Corporation is owned by RIC Holding Inc., which is owned by Riverwood Holding Inc.

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Petitioner respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

OPINIONS BELOW

The Federal Circuit's Opinion (App. A) is reported at *Riverwood International Corp. v. The Mead Corp.*, 212 F.3d 1365, 54 U.S.P.Q.2d 1763 (Fed. Cir. 2000). The district court's opinion (App. B) is unreported but may be cited as *Riverwood International Corp. v. The Mead Corp.*, No. 1:94-CV-0090-CAM (N.D. Ga. Jan. 13, 1999). The special master's report (App. C) is unreported but may be cited as *Riverwood International Corp. v. The Mead Corp.*, No. 1:94-CV-0090-CAM (N.D. Ga. Mar. 9, 1998).

STATEMENT OF JURISDICTION

The judgment of the United States Court of Appeals for the Federal Circuit was entered on May 17, 2000. The Federal Circuit entered an order denying a timely petition for rehearing and petition for rehearing en banc on June 22, 2000 (App. D).

The jurisdiction of this court is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISION INVOLVED

This case involves 35 U.S.C. § 103(a), which states:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences

> between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

STATEMENT OF THE CASE

This is a patent infringement case in which petitioner filed suit alleging that respondent was infringing upon claims one and thirteen of petitioner's United States Patent No. 5,241,806 (the '806 patent). Generally, the '806 patent relates to an invention for placing articles, such as bottles or cans, into cartons. Petitioner manufactures and leases machines that are covered by the '806 patent.

Respondent denied petitioner's allegations of infringement and counterclaimed alleging that claims one and thirteen of the '806 were invalid for obviousness and that petitioner's '806 patent was unenforceable due to inequitable conduct. After discovery, the district court appointed a special master to receive evidence from the parties on the liability issues of patent infringement, validity, and enforceability.[1] Although the parties initially demanded a jury trial, that demand was withdrawn and the proceedings became a nonjury matter.

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1. The issue of damages was not before the special master due to a previous order bifurcating the trial of this case.

Following a seven day trial, the special master issued a report. *See* App. C. After setting forth the findings of fact, the special master reported the following conclusions of law: (1) respondent was infringing claims one and thirteen of petitioner's '806 patent; (2) the '806 patent was not unenforceable for inequitable conduct; and (3) claims one and thirteen of the '806 patent were invalid for obviousness. App. C at 57a. Thereafter, both parties made application to the district court and filed numerous objections to the special master's report. More specifically, petitioner presented errors in both the special master's findings of fact and conclusions of law. App. B at 8a.

On consideration of the special master's report, the district court noted that pursuant to Rule 53 of the Federal Rules of Civil Procedure, the district court had to accept the findings of fact made by the special master unless clearly erroneous. Without specifically addressing *any* of the errors in the findings of fact asserted by the petitioner, the district court accepted the special master's findings of fact, finding none clearly erroneous. App. B at 9a.

Turning to the conclusions of law, the district court adopted both the special master's conclusion of infringement and conclusion that the patent was not unenforceable for inequitable conduct. However, the district court rejected the special master's conclusion that claims one and thirteen were invalid for obviousness. App. B at 13a. Instead, the district court found that the special master had improperly focused on the obviousness of substituting a particular element to create petitioner's invention rather that viewing the invention as a whole as required by 35 U.S.C. § 103. App. B at 11a-12a. The district court also noted that the special master had improperly pitted his own opinion on obviousness against the evidence

presented during the proceedings before the special master. App. B at 11a-13a. Accordingly, the district court entered judgment in favor of petitioner, concluding that respondent had not carried the burden of proving, by clear and convincing evidence, that claims one and thirteen of petitioner's '806 patent were invalid. App. B at 13a-15a.

Respondent appealed the district court's judgement to the United States Court of Appeals for the Federal Circuit. Of particular relevance here, respondent's Notice of Appeal indicates only that it was appealing the district court's judgement, which would include the district court's legal conclusions and underlying findings of fact. App. E. Upon receiving respondent's Brief of Appellant, petitioner learned respondent was only challenging the district court's legal conclusion that the patent was not invalid for obviousness. Respondent did not challenge the findings of fact underlying the legal conclusion of nonobviousness, the legal conclusion of infringement, nor the legal conclusion of no inequitable conduct. Brief of Appellant at 1.

Petitioner's response in its Brief of Appellee was two-fold: First, petitioner presented reasons for affirming the district court's legal conclusion that respondent had not carried the burden of proving by clear and convincing evidence that claims one and thirteen of petitioner's patent were invalid for obviousness. Second, in the event the Federal Circuit decided this legal conclusion was incorrect based on the district court's underlying findings of fact, petitioner presented numerous clear errors in those findings of fact that upon review would require the Federal Circuit to affirm the district court's legal conclusion, albeit on different grounds. Brief of Appellee at 30-62. Furthermore, at oral argument before the Federal Circuit, in response to a question from

the bench, petitioner specifically asserted that the district court's factual findings contained clear errors that must be reviewed before reversing the district court's legal conclusion.

Nevertheless, in its written opinion, the Federal Circuit did not even acknowledge petitioners assertion of clear errors in the district court's underlying findings of fact. App. A. Instead, the Federal Circuit expressly indicated that it was limiting its scope of view solely to the district court's legal conclusion of obviousness because the *respondent* did not challenge the findings of fact:

> In this case, the district court has accepted all of the special master's findings of fact, and the appellant [Mead] does not challenge any of them. Our task is to examine the findings related to the factors articulated in Graham and determine whether the district court erred by deciding that the claims were not obvious as a matter of law.

App. A at 4a.

Accordingly, in its written opinion, the Federal Circuit simply repeated the facts as adopted by the district court from the special master's report. Based on these facts, the Federal Circuit concluded that "we are led to the ineluctable conclusion that claims one and thirteen of the '806 patent are invalid." App. at 6a.

Petitioner then filed with the Federal Circuit a Petition for Rehearing and Petition for Rehearing En Banc. Therein, petitioner asserted that under *Panduit Corp. v. Dennison Manufacturing Co.*, 810 F.2d 1561 (Fed. Cir. 1987) the

Federal Circuit, sitting in review of an obviousness determination, must review not only the legal conclusion of obviousness but also the underlying findings of fact. Without comment, the Federal Circuit denied petitioner's Petition for Rehearing and Petition for Rehearing En Banc. App. at D.

REASONS FOR GRANTING THE WRIT

I.

THE DECISION OF THE COURT OF APPEALS CONFLICTS WITH PRIOR DECISIONS OF THE FEDERAL CIRCUIT AND THE SUPREME COURT'S DIRECTIVE TO ESTABLISH A SCOPE OF REVIEW.

The Federal Circuit's decision in this case is in direct conflict with the scope of review established by the Federal Circuit over 13 years ago in *Panduit Corp. v. Dennison Manufacturing Co.*, (*Panduit II*), 810 F.2d 1561 (Fed. Cir. 1987), *cert. denied*, 481 U.S. 1052 (1987).

In *Panduit II,* the Federal Circuit unequivocally described the scope of review for a 35 U.S.C. § 103 obviousness determination:

> On review of a judgment based on a conclusion of obviousness under 35 U.S.C. § 103, this court *must* consider not only whether there is legal error, *but also* whether the underlying findings are either nonprobative, or clearly erroneous, or both.

Id. at 1565 (emphasis added). In the present case, despite the appeal of a judgment based on a conclusion of obviousness under 35 U.S.C. § 103, the Federal Circuit did

not review the findings of fact underlying the district court's legal conclusion of nonobviousness. Furthermore, both in brief and oral argument before the Federal Circuit, petitioner asserted numerous clear errors in the underlying findings of fact that would lead to affirming the district court's judgment. Without review or even summary acknowledgment of these clear errors raised by petitioner, the Federal Circuit reversed the district court's legal conclusion of nonobviousness and invalidated claims one and thirteen of petitioner's patent. *See* App. A.

More surprisingly, the Federal Circuit expressly indicated that its scope of review was limited to the district court's legal conclusion of nonobviousness because the *respondent* (the appellant below) did not appeal the findings of fact. App. A at 4a. Thus, in addition to an unexplained departure from its own precedent, the Federal Circuit defined its scope of review based on what was challenged by respondent and ignored petitioner's assertion of clear errors in the findings of fact. Petitioner respectfully asserts that under the Federal Circuit's precedent and fairness to parties before the courts, petitioner should have an opportunity to be heard on these issues.

By not following the scope of review it created, the Federal Circuit's decision in this case also conflicts with the Supreme Court's instruction to the Federal Circuit, in 1986, to establish a scope of review for the obviousness determination.

In *Panduit Corp. v. Dennison Manufacturing Co., Inc., (Panduit I)*, 774 F.2d 1082 (Fed. Cir. 1985), the district court held that certain claims of Panduit's patent were invalid on the ground of obviousness. On an appeal by Panduit, the

Federal Circuit reversed after carefully discussing "numerous errors" in the district court's obviousness determination. *Id.* at 1091-1100. While its opinion was lengthy and reflected a careful examination of the proceedings in the district court, the Federal Circuit failed to set forth its scope of review of the district court's obviousness determination.

Dennison then petitioned the Supreme Court for a writ of certiorari. As set forth in the opinion of the Supreme Court, Dennison asserted that the Federal Circuit had ignored the clearly erroneous scope of review required by Federal Rule of Civil Procedure 52(a) for underlying findings of fact by the district court. *Dennison Manufacturing Co. v. Panduit Corp.*, 475 U.S. 809, 810 (1986). After noting that Dennison's claims were "not insubstantial", the Supreme Court indicated:

> The Federal Circuit, however, did not mention Rule 52(a), did not explicitly apply the clearly-erroneous standard to any of the District Court's findings on obviousness, and did not explain why, if it was of that view, Rule 52(a) had no applicability to this issue. We therefore lack an adequate explanation of the basis for the Court of Appeals' judgment: most importantly, we lack the benefit of the Federal Circuit's informed opinion on the complex issue of the degree to which the obviousness determination is one of fact.

Id. at 811. The Supreme Court granted the petition for certiorari, vacated the Federal Circuit's judgment, and remanded the case for further consideration in light of Rule 52(a). *Id.*

Therefore, as directed by the Supreme Court on remand in *Panduit II*, the Federal Circuit unequivocally established the scope of review for a district court's obviousness determination. *Panduit Corp. v. Dennison Manufacturing Corp.*, 810 F.2d 1561, 1565 (Fed. Cir. 1987). As for the factual findings that support the decision of obviousness or nonobviousness, the Federal Circuit held that such must be probative and not clearly erroneous. *Id.* As for the decision of whether the invention is obvious or nonobvious, the Federal Circuit held that such is a legal conclusion based on the factual findings. *Id.*[2]

Most relevant here, the Federal Circuit stated that *both* the underlying findings of fact and the legal conclusion of obviousness built upon such findings *must* be reviewed on an appeal of the district court's obviousness determination. 810 F.2d at 1565. In the present case, however, in conflict with its own precedent and in conflict with the Supreme Court's directive to establish a scope of review, the Federal Circuit invalidated claims one and thirteen of petitioner's patent without reviewing the findings of fact underlying the obviousness determination.

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2. The legal conclusion of obviousness is reviewed *de novo*. *See, e.g.*, *Valmet Paper Machinery Inc. v. Beloit Corp.*, 105 F.3d 1409, 1412 (Fed. Cir.), *cert. denied*, 522 U.S. 1028 (1997) ("The test for nonobviousness begins with a factual inquiry, and ends with a legal conclusion based on the resultant factual foundation. . . . On appeal, we apply the clearly erroneous standard to the court's factfinding, and we review the legal conclusion *de novo*.") (citing *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566-68 (Fed. Cir. 1987).

II.

THE EXERCISE OF THE SUPREME COURT'S SUPERVISORY POWERS IS WARRANTED BECAUSE THE DECISION OF THE FEDERAL CIRCUIT WILL ENCOURAGE PREVAILING PARTIES TO FILE UNNECESSARY AND FRIVOLOUS APPEALS.

This Court has repeatedly held that a party is not entitled to prosecute an appeal from a judgment in its favor. *See, e.g., Public Service Comm'n v. Brashear Freight Lines*, 306 U.S. 204, 206 (1939) ("the successful party below has no standing to appeal. . . ."); *New York Telephone Co. v. Maltbie et al.*, 291 U.S. 645, 646 (1934) (prevailing party "is not entitled to prosecute an appeal from the decree in its favor.").[3] As the party who prevailed on obviousness, infringement, and inequitable conduct, petitioner had no standing to appeal the district court's judgment in this case. Indeed, petitioner suffered no injury by the district court's judgment below.

However, the decision of the Federal Circuit will force parties (such as petitioner) that prevail in the district court to file appeals to protect their judgments regardless of their

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3. *See also Sierra Club v. Babbit*, 995 F.2d 571, 575 (5th Cir. 1993) ("Where standing to appeal is at issue, appellants must demonstrate some injury from the judgment below."); *Jarvis v. Nobel/Sysco Food Services Co.*, 985 F.2d 1419, 1424 (10th Cir. 1993) (prevailing party cannot appeal unless judgment only provided part of the relief sought); *Great American Audio Corp. v. Metacom, Inc.*, 938 F.2d 16, 19 (2d Cir. 1991) ("In order to have standing to appeal, a party must be aggrieved by the judicial action from which it appeals."); 15A WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE § 3902 (1992).

lack of standing. By ignoring a prevailing party's arguments that would support the judgment below and by considering only those issues raised by the party filing the Notice of Appeal, the Federal Circuit's decision sends the wrong message to prevailing litigants: File a Notice of Appeal or your arguments will not be considered.

The circumstances of the present case are not unique to petitioner or patent law and serve as an example of how this problem will arise again.

After review of the special master's report, the district court entered partial summary judgment in favor of petitioner. App. B at 15a. More specifically, the district court noted that petitioner prevailed on the issues of infringement, inequitable conduct, and obviousness. App. B at 14a. However, at every step along the path to this Court, petitioner has asserted that there were clear errors in the findings of fact upon which the district court's conclusion of nonobviousness rested.

Specifically, petitioner made exception to clear errors in the underlying factual findings set forth in the special master's report and argued these exceptions to the district court. App. B at 8a. The district court wholly accepted the findings of fact underlying the special master's obviousness determination but concluded that, regardless, claims one and thirteen of petitioner's '806 patent were not invalid for obviousness. App. B at 9a, 12a-13a.

Respondent then filed a Notice of Appeal of the district court's judgment. App. E. The Notice of Appeal indicates that the district court's *granting of partial summary judgment* is being appealed. More specifically, respondent did not

indicate that it was only appealing the district court's legal conclusion of nonobviousness of claims one and thirteen of petitioner's '806 patent. Indeed, Federal Rule of Appellate Procedure 3(c) does not appear to require any such specificity. Therefore, petitioner was not provided with notice of respondent's decision to only appeal the district court's legal conclusion of obviousness until such time when petitioner received respondent's Brief of Appellant.

In response, petitioner timely filed its Brief of Appellee with the Federal Circuit. Therein, petitioner devoted at least twenty pages of its sixty-three page brief to the assertion of clear errors in the underlying findings of fact that, upon review, would lead to affirming the district court's judgment for petitioner. *See* Brief of Appellee at 22-23, 28-29, 31-62. Furthermore, during oral argument before the Federal Circuit, in response to a question from the bench, petitioner expressly asserted that the underlying findings of fact contained errors requiring review.

Nevertheless, the Federal Circuit focused on the fact that *respondent* had not "challenged" the district court's findings of fact. App. A at 4a. Thus, the Federal Circuit reviewed *only* the district court's legal conclusion of nonobviousness.[4] As even a cursory review of the opinion reveals, the Federal Circuit simply accepted the district court's factual findings but arrived at a different legal conclusion on obviousness. Reversing the district court and entering judgment for the respondent, the Federal Circuit noted that based on the underlying findings of fact, it was "led to the ineluctable conclusion that claims one and thirteen of the '806 patent are invalid." App. A at 6a.

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4. Surprisingly, the Federal Circuit's opinion lacks even a single reference to any assertion raised by petitioner in its Brief of Appellee.

The implication of the Federal Circuit's decision is that only those issues "challenged" by the party filing a Notice of Appeal will be addressed because such is the only difference here procedurally between respondent and petitioner. Otherwise, both respondent and petitioner in this case "challenged" issues by raising such in their briefs to the Federal Circuit. As the prevailing party on appeal, petitioner did not have standing or injury upon which to file a Notice of Appeal. Under the scope of review applied by the Federal Circuit, petitioner would have been in a better position on appeal if it had lost on the issue of obviousness before the district court.

Accordingly, regardless of the decisions of the Supreme Court on standing to appeal, the message sent to prevailing litigants is loud and clear: Ensuring an opportunity to be heard in the court of appeals requires the filing of a Notice of Appeal. Furthermore, given that litigants frequently wait until the last moment to file and serve a Notice of Appeal, prevailing parties will have to file a Notice of Appeal as a matter of course in order to ensure that the judgment below is protected. Once the time for filing a Notice of Appeal has elapsed, and if the nonprevailing party did not file a Notice of Appeal, then the prevailing party can attempt to have its appeal dismissed.

Therefore, if left unreviewed, the Federal Circuit's decision will require the unnecessary expenditure of both litigant resources and judicial resources. Litigants will be forced to ignore the Supreme Court's line of decisions, cited above, regarding standing to appeal.

III.

THE GRANTING OF A WRIT OF CERTIORARI TO PETITIONER WILL NOT BE A FUTILE ENDEAVOR.

In *Dennison Manufacturing Co. v. Panduit Corp.*, 475 U.S. 809 (1986), the Supreme Court granted the writ of certiorari, vacated the decision of the Federal Circuit, and remanded for further consideration. The Court noted "In the absence of an opinion clearly setting forth the views of the Court of Appeals on these matters, we are not prepared to give plenary consideration to petitioner's claim that the decision below cannot be squared with Rule 52(a)." *Id.* at 811.

Petitioner seeks only to have a meaningful opportunity to be heard. While petitioner will certainly brief the obviousness issue if directed by this Court, petitioner's request here is that this Court grant the writ of certiorari, vacate the Federal Circuit's opinion, and remand for proper application of the scope of review, which would include consideration of petitioner's assertions of clear errors in the findings of fact underlying the obviousness determination. As in *Panduit*, the granting of a writ of certiorari would not be futile because at the very least, such will result in obtaining the Federal Circuit's views on the issues presented here.

Furthermore, clear errors exist in the district court's findings of fact underlying its obviousness determination. Petitioner asserts here, as it did below, that review of these clear errors will lead to affirming the district court's judgment in favor of petitioner.

By way of example, this Court held in *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966) that the obviousness determination is based on certain underlying factual findings including: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. Such objective evidence includes the commercial success of the claimed invention and the failure of others. *Id.* at 17-18. Petitioner asserts that the special master clearly erred in interpreting the scope and content of the prior art as well as in deciding the facts relevant to the objective evidence of nonobviousness. *See, e.g.*, Brief of Appellee at pp. 35-37, 49-63.

More specifically, the special master ignored the commercial success of petitioner's commercial embodiment of the '806 patent due to an erroneous finding that petitioner had entered an agreement with a customer to fund the development of the machine in return for rebates on other products sold by petitioner. A28, ¶ 54.[5] The development agreement between petitioner and the customer did not grant *any* rebates and did not require the customer to purchase any machines. This clear error led the special master to completely ignore evidence showing that the introduction of petitioner's commercial embodiment allowed petitioner to significantly increase its market share. A277-78; pp.1279, 1282-83.

Furthermore, the special master found there was "no evidence of failure of others sufficient to add any substance to secondary considerations." A28; ¶ 56. However, petitioner submitted evidence showing that respondent

5. Citations to A__, refers to the Joint Appendix filed in the Federal Circuit.

considered at least five different designs before settling upon its infringing machine. A150-151, pp. 521-24; A1935-1936; pp. 41-42; A1635-1637; A1704, p. 47 . These examples are only a few of the clear errors in the unreviewed underlying findings of fact.

CONCLUSION

For the reasons set forth above, the petition for a writ of certiorari should be granted.

Respectfully submitted,

WELLINGTON M. MANNING, JR.
Counsel of Record
TIM F. WILLIAMS
DORITY & MANNING, P.A.
Attorneys for Petitioner
700 East North Street, Suite 15
Greenville, South Carolina 29601
(864) 271-1592

APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DATED AND DECIDED MAY 17, 2000

United States Court of Appeals for the Federal Circuit

99-1274

RIVERWOOD INTERNATIONAL CORPORATION,

Plaintiff-Appellee,

v.

THE MEAD CORPORATION,

Defendant-Appellant.

* * *

DECIDED: May 17, 2000

Appealed from: United States District Court for the Northern District of Georgia

Senior Judge Charles A. Moye, Jr.

Before MAYER, *Chief Judge*, SCHALL and GAJARSA, *Circuit Judges*.

MAYER, *Chief Judge*.

The Mead Corporation ("Mead") appeals from the judgment of the United States District Court for the Northern

District of Georgia, holding that Mead infringed claims 1 and 13 of U.S. Patent No. 5,241,806 ("the '806 patent") owned by Riverwood International Corporation ("Riverwood") and that these claims were not invalid for obviousness. *See Riverwood Int'l Corp. v. Mead Corp.*, No. 1:94-CV-0090-CAM (N.D. Ga. Jan. 13, 1999) ("Order"). Because the district court erroneously concluded as a matter of law that the claims were not invalid for obviousness, we reverse.

Background

This appeal arises out of a patent infringement dispute over cartoners. Cartoners are machines designed to automatically group articles, such as beverage cans or bottles, and load them into paperboard cartons. Cartoners are usually used in industrial applications such as beverage bottling facilities. Riverwood owns the rights to the '806 patent, embodied in practice by its TwinStack model. Claim 1 and dependent claim 13 of the '806 patent are the only claims at issue. These two claims cover a cartoner with three incoming streams of articles and a barrel cam loader. This type of cartoner is known in the art as a three-conveyer cartoner. The loader, which is usually a barrel cam or an angulated guide in the prior art, forces the articles into the cartons. A barrel cam pushes the articles in a manner similar to a horizontal escalator, whereas an angulated guide works passively, merely providing a static wall or rail to divert the path of the otherwise propelled articles.

After Mead developed and marketed its DuoStack model, a three-conveyer cartoner with a barrel cam loader, Riverwood brought suit for infringement of the '806 patent.

Appendix A

The district court appointed a special master pursuant to Federal Rule of Civil Procedure 53 to hear evidence and arguments from the parties. The special master made findings of fact and concluded *inter alia* that claims 1 and 13 of the '806 patent were invalid for obviousness. *See Riverwood Int'l Corp. v. Mead Corp.*, No. 1:94-CV-0090-CAM (N.D. Ga. Mar. 11, 1998) ("Report"). The district court accepted the findings of fact in whole and without modification, but contrary to the special master, concluded that the claims would not have been obvious to one of ordinary skill in the art. *See* Order at 3. Mead appeals this aspect of the district court's judgment.

Discussion

On appeal from a non-jury trial, the ultimate determination of whether the claims at issue would have been obvious under 35 U.S.C. § 103 is a legal conclusion that we review *de novo*. *See Robotic Vision Sys., Inc. v. View Eng'g, Inc.* 189 F.3d 1370, 1376, 51 USPQ2d 1948, 1953 (Fed. Cir. 1999). An obviousness determination is based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 13-14, 148 USPQ 459, 465 (1966); *Robotic Vision*, 189 F.3d at 1376, 51 USPQ2d at 1953. In addition, when obviousness is based on particular prior art references, there must be a showing of a suggestion or motivation to combine the teachings of those references, though it need not be expressly stated. *See B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582-83,

37 USPQ2d 1314, 1318 (Fed. Cir. 1996); *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988). In this case, the district court has accepted all of the special master's findings of fact, and the appellant does not challenge any of them. Our task is to examine the findings related to the factors articulated in *Graham* and determine whether the district court erred by deciding that the claims were not obvious as a matter of law.

(1) *Scope and Content of the Prior Art and* (2) *Difference Between the Prior Art and the Claims*

Claim 1 of the '806 patent contains four limitations: an infeed conveyer, an article selecting conveyor, a carton conveyor, and an article group transfer means. Claim 13 incorporates all the subject matter of claim 1 and adds a "cam track/cam follower assembly" to the fourth element. According to the special master, Riverwood stipulated that a patent in the prior art, U.S. Patent No. 3,778,959 to Langen ("the Langen patent"), discloses the first three limitations of claim 1. *See* Report at 10. The special master found that the fourth limitation of claim 1 defines what is commonly known in the art as a "barrel cam loader" and that barrel cam loaders in cartoners were known in the prior art. *See id.* The special master also found that a "cam track/cam follower assembly" is a common structure used in barrel cam loaders, and concluded that "claim 13 [would have been] obvious for the same reasons as claim 1." *Id.* at 27. In addition, the special master found that Langen "first disclosed in that patent angulated fixed guide rails stating that angulated fixed guides are an improvement over 'escalators' (barrel cam loaders), not that escalators are not an obvious alternative . . . ."

Id. at 11. Upon examining the remainder of the prior art, the special master found that the prior art recognized the obviousness of substituting one type of loader for another in a cartoner. *See id.* at 11.

(3) *Level of Skill in the Art*

The special master found that one of ordinary skill in the art "would be knowledgeable of problems and solutions to the design of cartoners" and that " . . . the numerous prior patents in evidence show that there were numerous solutions developed to solve the problems and the solutions occurred relatively frequently in a relatively sophisticated and developed technology." *Id.* at 10; *see Pro-mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). Thus, these findings support the conclusion that it would have been obvious to someone of ordinary skill in the art at the time of the invention to replace the angulated fixed guide rail loader in the Langen patent with a barrel cam loader and that a suggestion or motivation to make that substitution existed in the prior art.

(4) *Objective Factors*

According to the special master, Riverwood presented some evidence of commercial success. He found, however, that much of that success was attributable to factors outside the scope of claims 1 and 13 of the '806 patent. *See id.* at 15; *In re GPAC*, 57 F.3d 1573, 1580, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) ("For objective evidence to be accorded substantial weight, its proponent must establish a nexus

between the evidence and the merits of the claimed invention."). Finally, the special master found that there is no evidence that the Mead DuoStack was a copy of the TwinStack cartoner, that there was no long-felt need for an improvement in cartoners that was solved by the subject matter of the claims of the '806 patent, and that there was no significant evidence of the failure of others. *See* Report at 16. Based on these findings, he determined that the objective factors did not carry sufficient weight to override a conclusion of obviousness based on the primary considerations.

In view of all these findings, we are led to the ineluctable conclusion that claims 1 and 13 of the '806 patent are invalid. The district court's conclusion of nonobviousness is not supportable by the facts found.

Conclusion

Accordingly, the judgment of the United States District Court for the Northern District of Georgia is reversed.

REVERSED

APPENDIX B — ORDER AND JUDGMENT OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA, ATLANTA DIVISION DATED AND FILED JANUARY 13, 1999

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

1:94-cv-0090-CAM

RIVERWOOD INTERNATIONAL CORP.,

Plaintiff,

v.

THE MEAD CORPORATION,

Defendant.

ORDER

This matter is before the Court on the parties' cross-motions to bring objections to the Report submitted by Special Master Dalbert U. Shefte on March 11, 1998 pursuant to Fed. R. Civ. Proc. 53.

Pursuant to this Court's order of December 8, 1995, the Special Master received evidence from the parties on the liability issues of patent infringement, patent validity and patent enforceability, the liability and damages issues having been bifurcated. The Special Master took evidence over the course of seven days and rendered his Report and

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Recommendations on March 11, 1998. On page 33 of that report the Special Master stated his conclusions as follows:

> A. Mead's accused DuoStack cartoner infringes claims 1 and 13 of (Plaintiff's) '806 patent;
>
> B. Claims 1 and 13 are invalid for obviousness; and
>
> C. The '806 patent is not unenforceable for inequitable conduct.

The parties filed cross-motions to bring objections to the Report, which they did along with extensive briefs on the law and facts, all of which the Court carefully considered. As to the Special Master's first conclusion, Mead only wished the Court to modify it to conclude that the DuoStack cartoner would infringe the '806 patent if it were enforceable. Plaintiff sought reversal of the second conclusion as to obviousness, and defendant sought reversal of the third conclusion relating to inequitable conduct. The Court then heard the parties fully at oral argument on the facts and the law.

Although a jury trial in this case was originally demanded, the parties midway withdrew that demand and the matter became a non-jury one. The Court's actions with respect to the Special Master's Report are therefore governed by Rule 53(e)(2):

> In an action to be tried without a jury the court shall accept the master's findings of fact unless clearly erroneous. * * * The court after hearing

> may adopt the report or may modify it or may reject it in whole or in part or may receive further evidence or may recommit it with instructions.

At the conclusion of the hearing, the Court, stated its conclusions and reasoning generally, but sets them forth in more detail in this order.

The language of Rule 53(e)(2) is clear that, after hearing, the Court must accept the Special Master's findings of fact unless clearly erroneous, and the Court now accepts each of the Special Master's findings of fact as to all the matters at issue, finding none of them clearly erroneous. The language of the rule makes it clear that there is no such requirement as to conclusions of law. The Court has carefully read and considered the Special Master's conclusions of law as to the issues of infringement, as to which defendant has no real objection, and inequitable conduct and finds them correct and hereby adopts them as its own conclusions of law. The principal issue which the Court needs here to address therefore is its decision not to accept the Special Master's conclusion that claims 1 and 13 are invalid for obviousness. Before doing so, however, the Court finds it opportune to commend the thoroughness and ability with which the Special Master has performed his duties; the fact that the Court does not come to the same conclusion of law as the Special Master in one instance is certainly no reflection on the excellence of his report.

The Court's conclusion that claims 1 and 13 of the '806 patent are not invalid for obviousness is a conclusion of law as to which the Court is not required to accept the Special

Master's finding if not clearly erroneous. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1965). Even the subsidiary conclusion, that of obviousness, is a question of law, not a finding of fact which the Court was required to accept unless clearly erroneous, even though it subsumes numerous subsidiary factual inquiries to arrive at an overall determination of whether the subject matter as a whole would have been obvious to a person of ordinary skill at the time the invention was made. *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437, 1446 (Fed. Cir. 1997) .

As pointed out in paragraph 18 of the Special Master's Conclusions (p. 23):

> The '806 patent is presumed valid pursuant to 35 U.S.C. §282, and Mead has the burden of proving, by clear and convincing evidence, that the '806 patent claims 1 and 13 are invalid. *American Hoist & Derrick v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 821 (1984).

During the prosecution of the application resulting in the '806 patent, The Examiner rejected as obvious the subject matter of the original application claim 13 which combined a barrel cam loader with elements of original application claim 13, which defined item (d) only as "article group transfer means constructed and arranged to move article groups into the open ends of carton sleeves." (Report, par. 40, p. 12). The application was then amended "to not only incorporate the barrel cam loader of original application claim 13 but also to add to the claim a three stream feature,

with an article infeed conveyer supplying a 'first stream' of articles, an article selecting conveyer intersecting the infeed conveyer to form and move a 'second stream' of article groups, and a carton supply conveyer providing a 'third stream' of cartons". (Report, par. 412, p. 12). The '806 patent was granted upon that amendment.

The examiner thus found that a barrel cam loader as applied to a two stream mechanism was obvious, but as applied to the three stream mechanism described in the amended application was not.

A patent is invalid for obviousness where the differences between the subject matter of the patent and the prior art "are such that the subject matter as a whole[1] would have been obvious at the time the invention was made to a person having ordinary skill in the art" to which the patent pertains. 35 U.S.C §103." (Report, par. 24 of Conclusions, p. 24). Thus the "subject matter as a whole" is what must be obvious to a person of "ordinary skill".

While the prior art in evidence demonstrated the obviousness of the substitution of a barrel cam loader for an angulated fixed guide two stream loader, it did not involve a three stream loader. The critical issue then became whether that step also would have been obvious to a person of *ordinary* skill in the art. That became the subject of expert opinion testimony as the "person of ordinary skill in the art" is an imaginary person. The examiner himself apparently

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1. Remembering, *Graham*, *supra*, p. 34: "The subject matter as a whole reduces, then, to the distinguishing features clearly incorporated into the claims".

gave little weight to the opinions of the expert witnesses for either side (Report, pp. 27-29), and the basis for his conclusion of obviousness may be found in ¶ 40 of his conclusions of law, p. 28:

> 40. Riverwood's patent expert, Mr. Pravel, opined that a teaching of substituting a barrel cam loader in a two stream cartoner did not render it obvious to substitute a barrel cam loader in a three stream cartoner. This is not persuasive as in both a two stream and a three stream cartoner the articles are in a single stream when the area acted upon by the barrel cam loader or the angulated fixed guide loader for which the barrel cam loader is substituted. Whether the articles have been in another third stream before they are in the stream that arrives at the barrel cam loader or the angulated fixed guide loader does not change the conditions of the articles in the loader, whether it be a barrel cam loader or an angulated fixed guide loader. Thus the obviousness of substituting a barrel cam loader would be as apt for a three stream cartoner as for a two stream cartoner.

While the Special Master's finding of the physical configuration is a factual one binding upon the Court, the crux of the finding is "the obviousness" would be "as Apt", i.e. apparent to the imaginary person of ordinary skill in the art. This critical recommended conclusion of law thus appears to be based upon a "stand-off" as between testifying expert witnesses and the Special Master's own recommended opinion-conclusion as to what would have been obvious to a person of ordinary skill. At this point it should be noted

that while the standard for obviousness is a person of ordinary skill, the Court here has before it only the testimony and recommendations of persons highly skilled in the art. While the testimony of the expert witnesses and the Special Master's own opinion conclusion are most persuasive, the Court is not convinced that the evidence submitted by Mead is so clear and convincing on the critical issue that, despite its presumption of validity, the '806 patent must be held invalid. The Court thus finds and concludes as a matter of law:

A. Mead's accused DuoStack cartoner infringes claims 1 and 13 of Plaintiff's '806 patent;

B. Claims 1 and 13 are not invalid for obviousness; and

C. The '806 patent is not unenforceable for inequitable conduct.

This order will be entered as a partial summary judgment in favor of the plaintiff pursuant to F. R. Civ. P. 54(b) — the Court finding there is no just cause for delay; further proceedings are hereby stayed pending appeal. Upon termination of the appeal, or the lapse of time for taking an appeal, the parties may move the Court for any appropriate action.

SO ORDERED, this 13th day of January, 1999.

s/ Charles A. Moye, Jr.
CHARLES A. MOYE, JR.
UNITED STATES DISTRICT
JUDGE

Appendix B

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

CIVIL ACTION FILE NO. 1:94-cv-0090-CAM

RIVERWOOD INTERNATIONAL CORP.,

Plaintiff,

vs.

THE MEAD CORPORATION

Defendant.

JUDGMENT

This action having come before the court, Honorable Charles A. Moye, Jr., United States Senior District Judge, for consideration of the parties' cross-motions to bring objections to the Report submitted by Special Master Dalbert U. Shefte. The Court finds and concludes as a matter of law:

A. Mead's accused DuoStack cartoner infringes claims 1 and 13 of Plaintiff's '806 patent;

B. Claims 1 and 13 are not invalid for obviousness; and

C. The '806 patent is not unenforceable for inequitable conduct.

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Ordered and Adjudged that partial summary judgment be entered pursuant to Rule 54(b), Federal Rules of Civil Procedure in favor of plaintiff.

Dated at Atlanta, Georgia this 13th day of January, 1999.

LUTHER D. THOMAS
CLERK OF COURT

By: s/ Joyce White
Deputy Clerk

APPENDIX C — SPECIAL MASTER'S REPORT OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA, ATLANTA DIVISION DATED MARCH 9, 1998 AND FILED MARCH 11, 1998

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

C.A. No.: 1:94-CV-0090-CAM

Riverwood International Corporation,

Plaintiff,

vs.

The Mead Corporation,

Defendant.

SPECIAL MASTER'S REPORT PURSUANT TO FEDERAL RULE OF CIVIL PROCEDURE 53

Pursuant to the Court's Order dated December 8, 1995, this patent infringement action came before the Special Master to hear all the evidence and arguments during a trial between the parties. The Court had ordered that trial of the matter take place in two phases, with the initial trial being conducted on the liability issues of patent infringement, patent validity and patent enforceability, and with the second trial (if necessary) being conducted on the willful infringement and damage issues. The initial trial took place

over the course of seven days in Atlanta, Georgia, on October 23 through November 3, 1997.

The Special Master has carefully considered all of the trial testimony and exhibits, the parties' arguments, the Plaintiff's motion for partial summary judgment on the issue of infringement and Defendant's responsive filings, the Consolidated Pretrial Order, both parties' post-trial papers including briefs, proposed findings of fact and conclusions of law, and the applicable law related to the liability issues. Based on this review, the Special Master finds that U.S. Patent No. 5,241,806 ("the '806 patent") has been infringed by Defendant, The Mead Corporation ("Mead"); that the '806 patent is invalid; and that Mead has not proven that the '806 patent is unenforceable due to inequitable conduct.

To support these conclusions, the Special Master enters the following Findings of Fact and Conclusions of Law. To the extent that any of the following findings of fact constitute a conclusion of law, they shall be so deemed and are adopted as such; to the extent that any of the conclusions of law constitute a finding of fact, they shall be so deemed and are adopted as such.

FINDINGS OF FACT

I. BACKGROUND

A. *Parties*

1. The Plaintiff, Riverwood International Corporation ("Riverwood"), is a Delaware corporation having a regular and established place of business in Atlanta, Georgia.

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2. The Defendant, The Mead Corporation ("Mead"), is an Ohio corporation having a regular and established place of business in Atlanta, Georgia.

B. *Nature of Action*

3. On January 13, 1994, Riverwood filed this action against Mead, alleging that Mead had infringed and was continuing to infringe U.S. Patent No. 5,241,806 ("the '806 patent") by making and/or having made and leasing a machine to customers that Mead calls the "DuoStack". On February 25, 1994, Mead filed an Answer and Counterclaim seeking a declaratory judgment that it did not infringe the '806 patent and that the '806 patent was invalid. On April 17, 1995, Mead filed a First Amended Answer and Counterclaim, continuing to assert noninfringement and invalidity and adding to its counterclaim a request for a declaratory judgement that the '806 patent was unenforceable due to inequitable conduct.

4. By the time of the initial trial, the parties had narrowed the liability issues to be decided to the following:

a. Does Mead's DuoStack machine infringe claims 1 and 13 of the '806 patent?

b. Is the '806 patent invalid under either 35 U.S.C. § 102 or 35 U.S.C. § 103? and

c. Is the '806 patent unenforceable due to inequitable conduct?

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II. THE '806 PATENT

A. *General Description*

5. Riverwood is the owner of the '806 patent.

6. The application for the '806 patent was filed on March 24, 1992, and lists Kelly Ziegler, Allen Olsen, and Curt Lovold as inventors. Messrs. Ziegler, Olsen, and Lovold were employees of Riverwood at the time the application for the '806 patent was filed.

7. The '806 patent is entitled "Continuous Motion Cartoner Assembly" and is directed to a machine known in the art as a "cartoner" that continuously loads groups of articles, such as beverage cans or bottles, into open-ended carton sleeves.

8. The cartoner described in the '806 patent is adjustable and may be used to load article groups into a variety of pack configurations, e.g. six-, twelve-, and twenty-four packs. The '806 patent also describes using the cartoner to load stacked groups of articles into a carton.

9. Figures 1 and 2 of the '806 patent illustrate the sections of the continuous motion cartoner and show a carton supply mechanism, a carton transport conveyor or mechanism, an article supply conveyor or mechanism, an article selection and transport conveyor or mechanism, and a product group transfer, or crossloading, mechanism.

10. The carton supply mechanism is located at the input end of and in line with the carton transport conveyor to supply

cartons to the carton transport conveyor. The carton supply mechanism erects and places cartons in an open sleeve configuration onto a carton transport conveyor which carries the cartons to an output end of the cartoner. The carton transport conveyor, which is also referred to as a "carton supply conveyor," has sets of flight lugs connected to flight chains that revolve around a drive assembly in a direction from the upstream portion of the cartoner to the downstream portion of the cartoner. During operation, cartons are placed by the carton supply mechanism between each set of carton flight lugs and are carried downstream by the carton supply conveyor to a loading position.

11. The article supply mechanism is also located at the input end of the cartoner and supplies a first stream of individual articles, such as beverage cans or bottles, along a conveyor to the article selection and transport mechanism. A first, upstream, portion of the article supply mechanism is parallel to the article selection and transport mechanism. A second, downstream, portion of the article supply mechanism turns inward and merges with the article selection and transport mechanism at an angle. Both portions of the article supply mechanism (also referred to as "infeed conveyor") have lane separator plates mounted above one or more conveyors running underneath so that the individual articles being moved along the conveyor(s) are separated into a plurality of single file lanes. These lane separator plates, or infeed guide structures, angle in towards the article selection and transport mechanism to allow the individual articles to be provided at an angle for merging with the article selection and transport mechanism.

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12. The article selection and transport mechanism is located adjacent to and parallel with the carton supply conveyor. This article selection and transport mechanism, which is also referred to as the "article selecting conveyor," includes a plurality of spaced, parallel, transversely oriented, and transversely fixed flight bars which are mounted towards the output end of the cartoner. The purpose of the article selecting conveyor is to accept individual articles from the infeed conveyor, form them into spaced groups of articles, and move the groups in a second longitudinal stream towards the output end of the cartoner so that a crossloading mechanism may eventually load the groups into cartons traveling on the carton conveyor.

13. The groups are moved by the article selecting conveyor within pockets formed between each pair of opposed flight bars. The article selecting conveyor and the carton supply conveyor are synchronized so that each formed group of articles riding within a flight bar pocket is aligned with a corresponding open-ended carton traveling on the carton supply conveyor in a third longitudinal stream of cartons.

14. The lane separators suspended above the infeed conveyor extend into the flow path of the article selecting conveyor. As the flight bars on the article selecting conveyor travel downstream and intersect with the lane separators, the flight bars engage the articles carried in the individual lanes that are flowing towards the article selecting conveyor. As the flight bars select and meter the individual articles from the infeed conveyor into the flight bar pockets, groups having a certain number of articles are formed.

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15. The crossloading mechanism is located adjacent to and parallel with the downstream portion of the article selecting conveyor. The crossloading mechanism pushes the article groups out of the flight bar pockets on the article selecting conveyor transversely into the open ends of the cartons traveling on the carton supply conveyor.

16. The crossloading mechanism has a plurality of loader arm assemblies that consist of transversely moving pushing mechanisms attached to a flight chain and guide tube assembly. The flight chain and guide tube assembly carries the pushers in a longitudinal direction towards the output end of the cartoner. A control cam assembly (cam follower/ cam track arrangement) provides transverse movement to the pushers. The particular form of crossloading mechanism illustrated in the '806 patent is commonly referred to as a "barrel cam loader."

B. *Disclosure of Nesting*

17. A loading head is located at the end of each pusher to engage and push the article groups into the open ends of the carton sleeves. In one embodiment as illustrated in Figures 1-16, the loader head has both fixed face members and extensible face members. In use, the combination of fixed and extensible face members allows the product groups to be loaded in an initially "nested" configuration, in which adjacent rows of articles are staggered or unaligned, and then converted to an aligned configuration within the cartons. This initial staggering allows a product group to move into the carton with a lesser width, after which the product group is returned to its normal width as the articles take on a side-by-

side, aligned arrangement. The patent describes this nesting feature as being "especially desirable" when loading glass beverage containers.

18. Included in the description of the loading head 117 of Figures 1-16, is the following statement relating to the "nesting" feature

> The essential feature of the head 117 is that the face members contacting the end containers alternate between fixed-type members 118 and extensible-type members 119 so that the container rows may be initially staggered for loading purposes.

19. An alternative embodiment of the loader head is illustrated in Figure 17 of the '806 patent, wherein the loading head is bifurcated to further divide pre-grouped patterns of articles in combination with a wedge shaped dividing funnel assembly for simultaneous loading of articles in two cartons, thereby approximately doubling the cartoning rates. The bifurcated loading head is illustrated in Figure 17 without any illustration of the extensible face members described above in regard to the embodiment of Figures 1-16.

20. While the specification of the '806 patent uses the same reference numeral 117 for the loading head of Figures 1-16 and Figure 17, the two loading heads are different, the Figure 17 loading head being bifurcated and not being illustrated with reference numerals 118 and 119 used in the Figures 1-16 embodiment for the combination of fixed and extensible face members. Further, in referring to the

embodiment of Figure 17, the specification states ('806 patent, column 11, lines 21-24):

> Modifications may be made to the remaining elements of the crossloader 15 to provide cam actuated stepped faces in this twin-headed embodiment.

21. In column 2, lines 29-34, it is stated:

> The cartoner assembly of the invention includes article group transfer structures which enable the individual rows of the article group to be moved and controlled with a positive force so that the article group can be tightly placed and maintained between the walls of the carton.

This passage does not mention nesting or the stepped or staggered feature of Figures 1-16, rather it is directed to the use of "a positive force," which is the result of the use of a pusher mechanism whether or not the pusher mechanism has fixed and extendable face members.

22. The "positive force" statement in column 2, lines 29-34 of the '806 patent is not distinguishing the invention from the previously discussed prior art Langen U.S. Patent No. 3,778,959 and Calvert U.S. Patent No. 4,237,673, which do not disclose "nesting," as nesting is shown in Langen U.S. Patent No. 4,936,077, which is also discussed previously in the specification.

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23. The file of the prosecution in the U.S. Patent and Trademark Office of the application resulting in the '806 patent makes no mention of the "nesting" feature as being disclosed or not disclosed in Figure 17 or its specification description.

24. The fact that the specification states that the loading head of Figure 17 "may be" modified to include "cam-actuated stepped faces" establishes that what is illustrated and disclosed in Figure 17 is a pre-nesting-modified embodiment.

25. The word "may" is used in the permissive sense, in the same sense that it is used in column 11, lines 15 and 16, where it states, in referring to the loading head 117 of the embodiment of Figures 1-16 that:

> Additionally, the loading head 117 may be bifurcated, as shown in FIG. 17,

This passage clearly is stating that the non-bifurcated loading head 117 of the embodiment of Figures 1-16 may be bifurcated, which bifurcation is shown in Figure 17.

26. Prior to describing the alternative embodiment of Figure 17, the '806 patent, in column 11, lines 6-10 states:

> The essential feature of the head 117 is that the face members contacting the end containers alternate between fixed-type members 118 and extensible-type members 119 so that the container rows may be initially staggered for loading purposes.

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This statement appears before the reference to the alternate embodiment of Figure 17 and is referring to an "essential feature" of the embodiment of Figures 1-16. The description of the "may be bifurcated" embodiment of Figure 17 without illustration or mention of fixed and extendible face members 118 and 119 of the embodiment of Figures 1-16, followed by the description of the modification that "may be made" to the embodiment of Figure 17 to provide cam-actuated stepped faces clearly establishes that stepped faces or "nesting" is not an "essential feature" of Figure 17, but is only an "essential feature" of the embodiment of Figures 1-16.

27. After the article groups are loaded into the cartons, the cartons continue to ride on the carton supply conveyor and are transported to a position on the machine where the carton flaps are closed, glued, and compressed. After these operations, the closed and fully loaded cartons are discharged from the cartoner.

C. *The Claims of the '806 Patent at Issue*

28. Claim 1 of the '806 patent reads as follows:

> A cartoner assembly for loading article groups into open carton sleeves comprising:
>
> a) an article infeed conveyor having a plurality of parallel guide structures fixed thereabove, said article infeed conveyor supplying a first stream of articles;
>
> b) an article selecting conveyor having a plurality of spaced, parallel and transversely oriented fixed

flight bars and a longitudinal travel path disposed adjacent to and parallel with said article infeed conveyor, said flight bars intersecting said article infeed guide structures at a predetermined angle to form and move a second longitudinal stream of article groups of a predetermined pattern;

c) a carton supply conveyor having spaced carton flight lugs synchronized and moving adjacent to and parallel with said article selecting conveyor to provide a third longitudinal stream of cartons with open ends facing said moving article groups; and

d) article group transfer means for moving article groups into the open ends of the carton sleeves, said article group transfer means comprising guide support means longitudinally moving in parallel synchronization with said carton supply conveyor, a plurality of transversely operative, longitudinally moving pushing mechanisms, and activation means to transversely move said pushing mechanisms at predetermined longitudinal positions.

29. Claim 13 of the '806 patent reads as follows:

The cartoner assembly of claim 1, wherein said activation means comprises a cam track/cam follower assembly.

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III. LEVEL OF SKILL

30. The level of skill of one ordinarily skilled in the art relevant to the subject matter of the '806 patent at the time of the invention in 1991 would have been that of one working on the design of cartoners having a two-year technical college degree and 2-5 years experience in cartoner design, manufacturing and use or the equivalent in experience of such combination of education and experience, and this person would be knowledgeable of problems and solutions to the design of cartoners to effectively and safely handle at high speeds the automatic loading of articles into cartons. Further, the numerous prior patents in evidence show that there were numerous solutions developed to solve the problems and the solutions occurred relatively frequently in a relatively sophisticated and developed technology.

IV. PRIOR ART

31. Riverwood has stipulated that elements (a) through (c) of claim 1 of the '806 patent are all disclosed in Langen U.S. Patent No. 3,778,959.

32. Element (d) of claim 1 of the '806 patent defines what is commonly known in the cartoner art as a "barrel cam loader."

33. Barrel cam loaders in cartoners were known in the prior art, being disclosed in Langen U.S. Patent No. 4,936,077, Le Bras U.S. Patent No. 4,756,139 and its European Patent counterpart No. 0 242 017, and in the Mead 1225 machine that was shipped to Pillsbury in 1988 (the "Pillsbury machine").

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34. The obviousness question here is whether the subject matter of claims 1 and 13 of the '806 patent would have been obvious to someone ordinarily skilled in the art at the time of the invention and specifically whether it would have been obvious for someone ordinarily skilled in the art at the time of the invention to use a barrel cam loader that was known to be used in cartoners of the prior art in a prior art cartoner that included all of the elements of items (a), (b) and (c) of claim 1 but was previously used with an angulated fixed guide rail loader, with consideration also being given to any relevant secondary consideration facts, such as commercial success, copying, long felt want, and failure of others.

35. The inventors of the '806 patent first developed a cartoner that had angulated fixed guides instead of a barrel cam loader and abandoned that construction because of potential patent infringement and rather incorporated a barrel cam loader construction which they knew was used in cartoners.

36. The prior art Pillsbury machine was a cartoner that fed articles into cartons and was constructed to include and to operate alternatively with a barrel cam loader and angulated fixed guide rails. This is evidence that it was a known alternative to use either type of loader in the same cartoner.

37. HJ Langen & Sons Ltd., the owner of Langen U.S. Patent No. 3,778,959, dated December 18, 1973, first disclosed in that patent angulated fixed guide rails stating that angulated fixed guides are an improvement over

"escalators" (barrel cam loaders), not that escalators are not an obvious alternative, and then later in Langen U.S. Patent No. 4,936,077, issued June 26, 1990, disclosed a barrel cam loader in a cartoner instead of escalators. This is evidence of the obviousness of substituting one type of loader for the other in a cartoner.

38. Prior art Le Bras U.S. Patent No. 4,756,139 disclosed the use of a barrel cam loader in a cartoner and referred as background to European Patent No. 0 017 333, that disclosed angled fixed guides, in a manner that is evidence that the prior art recognized the obvious substitution of one loader for the other.

39. If the teachings of European patent no. 0 17 333 were incorporated and disclosed in the Le Bras '139 patent, all of the subject matter of claims 1 and 13 of the '806 patent would be disclosed. However, reference to the European '333 patent as background in the Le Bras '139 patent does not constitute incorporation of that subject matter, but it is evidence that Le Bras disclosed the barrel cam loader as an improved alternative for an angulated fixed guide.

V. PROSECUTION OF THE APPLICATION RESULTING IN THE '806 PATENT

40. During the prosecution of the application resulting in the '806 patent, the Examiner rejected as obvious the subject matter of original application claim 13, which combined a barrel cam loader with elements of original application claim 1, which defined item (d) only as "article group transfer means constructed and arranged to move

article groups into the open ends of the carton sleeves." This rejection was based on the combination of the barrel cam loader of the prior art Langen '077 patent with a cartoner disclosed in prior art Nigrelli U.S. Patent No. 4,982,551, which disclosed a cartoner with angulated fixed guides. Thus, it was obvious to the Examiner to substitute a barrel cam loader in a cartoner having angulated fixed guides.

41. Notably, the applicants for the '806 patent did not contest this ruling of obviousness of the substitution of a barrel cam loader for angulated fixed guides in a cartoner, but rather amended application claim 1 to not only incorporate the barrel cam loader of original application claim 13 but also to add to the claim a three stream feature, with an article infeed conveyer supplying a "first stream" of articles, an article selecting conveyer intersecting the infeed conveyer to form and move a "second stream" of article groups, and a carton supply conveyer providing a "third steam" of cartons.

42. This amended original application claim 1 with amended added language underlined and deleted language in brackets reads as follows:

> 1. (Amended) A cartoner assembly for loading article groups into open carton sleeves comprising:
>
> a) *an* article infeed [means] *conveyor having a plurality of parallel guide structures fixed thereabove, said article infeed conveyor* supplying (at least one) *a first* stream of articles;

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b) *an* article selecting [means] *conveyor having a plurality of spaced, parallel and transversely oriented fixed flight bars and a longitudinal travel path disposed adjacent to and parallel with said article infeed conveyor, said flight bars* intersecting said article infeed [means] *guide structures at a predetermined angle* to form and move a *second* longitudinal stream of article groups of a predetermined pattern;

c) *a* carton supply [means] *conveyor having spaced carton flight lugs* synchronized and moving *adjacent to and* parallel with said article selecting [means] *conveyor* to provide *a third longitudinal stream of* cartons with open ends facing said moving article groups; and

d) article group transfer means [constructed and arranged to] *for* mov[e]*ing* article groups into the open ends of the carton sleeves, *said article group transfer means comprising guide support means longitudinally moving in parallel synchronization with said carton supply conveyor, a plurality of transversely operative, longitudinally moving pushing mechanisms, and activation means to transversely move said pushing mechanisms at predetermined longitudinal positions.*

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43. In arguing for allowance of this amended claim 1 in comparison with the combination of Langen and Nigrelli used by the Examiner in rejecting the subject matter of original claim 13, which was incorporated in the amendment to original claim 1, the applicant stated at page 9 of the Amendment filed February 25, 1993:

> For example, the addition of a side loading mechanism as shown in Langen to the basic two stream devices shown in Nigrelli, Olsen or Calvert would still yield a two stream device. None of the cited art shows or suggests a structure which selects raw infeed articles from a first stream, and then forms article groups in a second and distinct second stream prior to the loading into a third stream of cartons.

44. In that Amendment no mention was made of the prior art Langen U.S. Patent No. 3,778,959. Nor was there any statement that items (a), (b) and (c) were disclosed in the Langen '959 patent or that these items, which produce a three stream cartoner were known in the prior art.

45. As the claims originally filed in the application did not include the three stream feature, the Examiner had not selected the Langen '959 patent to cite as a reference and, when the amended claim 1 with the three stream feature was reviewed by the Examiner, the applicants' arguments directed him to consider the amended claim in relation to the prior art the Examiner had used to reject the original non-three stream claims.

46. Apparently, the Examiner then examined amended claim 1 and considered applicant's arguments in relation to the prior art patents the Examiner had originally cited and did not again review all of the prior art patents, including the Langen '959 patent, in determining that amended claim 1 was patentable.

47. It was not necessary for the Examiner to again recite the obviousness of substituting a barrel cam loader for an angulated fixed guide loader as the issue before him was the obviousness of a three stream system.

48. Had the Examiner been aware that the Langen '959 patent utilized a three stream system or that, as now admitted by Riverwood, that a three stream system without a barrel cam loader was known, it is clear that he would have again rejected claim 1 for the same reason as previously rejected, i.e., it would be obvious to substitute a barrel cam loader for an angulated fixed guide loader in a known three stream cartoner.

49. The '959 Langen patent was submitted to the U.S. Patent and Trademark Office by the applicants in an Information Disclosure Statement filed June 29, 1992. The patent was identified and a statement was made as to its contents on page 2 of the Information Disclosure Statement, which did not mention the three stream system feature of the '959 patent as the claims of the application at that time did not include the three stream system feature.

50. The Examiner initialed the PTO-1449 List of Prior Art Cited by Applicant that was submitted with the

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Information Disclosure Statement as having been reviewed by the Examiner on September 16, 1992. It was six months later, on March 17, 1993, that the Examiner indicated in a Notice of Allowability and Examiner's Amendment that upon review of the amended claims he found them allowable without indicating that he had considered the claims in relation to the '959 patent or that he had recalled having reviewed the '959 patent six months earlier.

51. While there is a presumption that an Examiner performs his function in a competent manner and, in this case, would have reviewed all of the prior art, including the '959 patent, before allowing amended claim 1, the facts here are evidence that he did not consider and was not aware of the '959 patent at the time he allowed claim 1.

VI. SECONDARY CONSIDERATIONS

52. As to the facts of commercial success of the subject matter of the '806 patent, Riverwood was commercially successful with its Twin Stack cartoner that does embody the subject matter of claims 1 and 13 of the '806 patent. However, the success was attributable to the package design as well as the machine and to the use of a pad between layers of articles in a double layer pack of articles, which permitted desirable additional advertising space. Neither the carton design nor the use of a layer pad are within the scope of claims 1 and 13 of the '806 patent. Nor do the claims provide any special double layer, or stacking, significance. Furthermore, Riverwood's witnesses testified that the Twin Stack cartoner incorporated features that were not within the scope of the '806 patent but rather were within the scope of four other Riverwood patents.

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53. Mead has developed and marketed a cartoner incorporating the subject matter of claims 1 and 13 of the '806 patent, which it markets under the name DuoStack. There is evidence that Mead was aware of development of Riverwood's Twin Stack cartoner, which would tend to support evidence of copying. However, there is no evidence that the Mead DuoStack was a copy of the Twin Stack cartoner

54. Much of the success of the Riverwood Twin Stack cartoner can be attributed to a development agreement entered into with Pepsi-Cola, who funded the development in return for which Riverwood granted rebates on cartons to Pepsi-Cola and an exclusive option on a first number of cartoners for use in the soft drink industry.

55. No evidence was presented that there was a long felt want for an improvement in cartoners that was solved by the subject matter of the claims of the '806 patent.

56. There is no evidence of failure of others sufficient to add any substance to secondary considerations. Rather, Riverwood's own development of the subject matter of the '806 patent resulted from concerns for infringement of other patents by initial cartoner designs, not that these earlier designs failed to provide commercially acceptable results.

VII. DEALINGS WITH THE PATENT OFFICE

57. There is no evidence that any statements made by the inventor-applicants of the application resulting in the '806 patent, the assignee of the rights to the application, or the

attorney who prepared and filed the application and prosecuted it in the U.S. Patent and Trademark Office were a mischaracterization, and there is no evidence that any of these parties intended to make any statements for the purpose of misleading the Examiner.

58. In the aforementioned Information Disclosure Statement, applicants, through their attorney, made the following statement to distinguish the invention of the originally filed claims from the identified Langen '959 patent:

> Applicants' invention differs from this reference in that it discloses a cartoner assembly comprising an article infeed mechanism supplying at least one stream of articles, an article selecting mechanism intersecting the article feed mechanism to form and move a stream of article groups of a predetermined pattern, a carton supply mechanism synchronized and moving parallel with the article selecting mechanism to provide cartons with open ends facing the moving article groups, and an article group transfer mechanism constructed and arranged to move article groups into the open ends of the carton sleeves.

59. The claims as originally filed did not recite the three stream system feature of the claims as ultimately issued. They did, however, include a transfer mechanism, recited in original claim 1 as "an article group transfer means" and original claim 13 as a "pushing mechanism." Interpreting the "means" in relation to the disclosure in the specification

of the patent application, claim 1 is defining the disclosed barrel cam loader, which was not disclosed in the '959 patent.

60. In considering the significance of the statement in the Information Disclosure Statement distinguishing the original claims from the '959 patent, attention has been given to the term "article group," which Riverwood contends is a distinction from the '959 patent. However, in the '959 patent, the articles are separated into groups with each group having a number of articles in an arrangement for insertion in a single carton. These groups are then guided angularly into the cartons with the sequential rows in each group being sequentially spaced outwardly as the group is angled by the guide. When the first row is fully seated in the carton the subsequent rows move sequentially fully into the cartons. While this is somewhat different from the transfer of article groups in the embodiment of Figures 1-16 of the '806 patent, where all of the rows move together in a staggered relation and then are manipulated into final position by the extendable members, there is the handling of articles in groups in both cartoners. Therefore, the handling of articles in groups as recited in original claim 1 is not a distinction over the '959 patent.

61. When the claims were amended to introduce the three stream system feature, arguments were made in support of unobviousness of this feature in relation to the patents that had been cited and applied by the Examiner in rejecting the originally filed claims and patents that has been cited, but not applied.

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62. The prior art that had been cited and applied by the Examiner in rejecting the claims was Nigrelli U.S. Patent No. 4,982,551, Olsen U.S. Patent No. 4,693,055 and Tisma U.S. Patent No. 5,072,573. The prior art that had been cited, but not applied, was Anderson U.S. Patent 4,250,693 and Ganz U.S. Patent No. 3,956,868. The '959 patent was not cited or mentioned otherwise by the Examiner.

63. Later, the Examiner did not mention the '959 patent in discussing allowance of the amended claims.

64. There is no evidence that the omission of any reference to the '959 patent was intended by the inventor-applicants, assignee or prosecuting attorney was for the purpose of misleading the Examiner.

65. The '959 patent was identified to the Examiner in the Information Disclosure Statement and was reviewed by the Examiner as indicated by his initialing the list of prior art submitted on behalf of the applicants, and he was not precluded from again reviewing the '959 patent at the time he considered and allowed the amended claims. The fact that the Examiner apparently did not again review the '959 patent, which the inventor-applicants, assignees and prosecuting attorney would have expected him to do, is not evidence of an intent to mislead.

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CONCLUSIONS OF LAW

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of Riverwood's patent infringement action pursuant to 28 U.S.C. § 1338(a) and jurisdiction over Mead's counterclaim pursuant to 28 U.S.C. § 2201.

2. Personal jurisdiction over Mead is proper as admitted by Mead.

3. Venue for this action is proper pursuant to 28 U.S.C. §§ 1391(c) and 1400(b).

II. INFRINGEMENT — CLAIM SCOPE

4. The scope of a claim is "a matter of law exclusively for the court." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). In addressing the legal issue of claim interpretation, three sources are to be consulted: the claims, the specification, and the prosecution history. *Id.* at 979. Extrinsic evidence such as the testimony of expert witnesses may also be considered, but only when necessary to resolve an ambiguity. *Vitrionics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1585, 39 USPQ 1573, 1579 (Fed. Cir. 1996).

5. The terms of a claim "will be given their ordinary meaning, unless it appears that the inventor used them differently." *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d at 1576, 1579 (Fed. Cir. 1988).

6. In interpreting "means plus function" language in claims of the type present here in element (d) of claim 1 of the '806 patent, one must look to the function as recited in the claim. Paragraph 6 of 35 U.S.C. § 112 sets forth the scope of a means plus function claim as follows:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or act described in the specification and equivalents thereof.

Thus, when a specified function is expressed in a claim, the claim is construed to cover the corresponding structure, etc. described in the specification. Accordingly, the first step in interpreting a means-plus-function claim is to determine the function being performed. The "function" is set forth in the claim itself. *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1573 (Fed. Cir. 1985). Next, the specification must be reviewed to determine what are the "structure, material, and acts" for accomplishing that function. The claim is then interpreted to cover these "structure, material, and acts" and equivalents thereof. *Id.*

7. In applying this means-plus-function requirement, attention must be directed to the function specified in the claim and the structure or structures disclosed in the specification for performing the function recited in the claim and equivalents thereof. *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 225 USPQ 236, 238 (Fed. Cir. 1985).

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8. In the present case, the means-plus-function element, the scope of which is to be determined, is the last element, element (d) of claim 1, which reads as follows:

> (d) article group transfer means for moving article groups into the open ends of the carton sleeves, said article group transfer means comprising guide support means longitudinally moving in parallel synchronization with said carton supply conveyor, a plurality of transversely operative, longitudinally moving pushing mechanisms, and activation means to transversely move said pushing mechanisms at predetermined longitudinal positions.

9. Element (d) recites a primary "means" in the form of "article group transfer means for moving article groups into the open ends of the carton sleeves," which is then stated to comprise "guide support means," "pushing mechanisms," and "activation means." The recitation in a claim of a primary means defined further as comprising components in the form of secondary means and structural elements does not preclude the application of Section 112, last paragraph, where the recitation of structure only describes a function. *The Laitram Corp. v. Rexnord, Inc.*, 19 USPQ2d 1367, 1369 (Fed. Cir. 1991). In claim 1, the term "pushing mechanisms" only expresses a function, pushing, not a structure, and, therefore, does not preclude interpretation of the "article group transfer means" by reference to the specification.

10. The function of the "article group transfer means" recited in claim 1 is:

moving article groups into the open ends of the carton sleeves.

It is the structure disclosed in the specification for carrying out this function that is to be considered. The claim is not to be limited to what might be added to a disclosed structure where such modification performs an additional function that does not come within the function recited in the claim. *D.M.I., Inc. v. Deere & Co., supra*, 225 USPQ 238. Thus, if a structure disclosed in the '806 patent performed some other function while performing the function of "moving article groups into the open ends of the carton sleeves," the scope of claim 1 would not be limited to the aspect of the structure that carries out this additional function.

11. With reference to the drawings and specification of the '806 patent, there are two embodiments disclosed for accomplishing the function of "moving article groups into the open ends of the carton sleeves." The first is illustrated in Figures 1-16 and described with reference to these figures, and the other is illustrated in Figure 17 and described in relation to this Figure as a modification of the embodiment of Figures 1-16.

12. In the embodiment of Figures 1-16, the pusher mechanism includes a loader head 117 that has two fixed face members 118 and an extensible face member 119 located between the fixed members, each member initially engaging one row of three rows of articles, with the extensible face member 119 retracted to stagger the articles in a row, thus allowing the product groups to be loaded in an initially "nested" configuration, in which the rows of articles are

staggered or unaligned, resulting in the groups having a narrower width than when aligned. This facilitates initial insertion of the nested rows of articles into the cartons, following which the extensible face member 119 is extended to the level of the adjacent outer fixed face members 118 during completion of the loading to move the rows of articles in the groups from a nested arrangement into an unstaggered and aligned configuration, fitting tightly into the cartons. The purpose of the "nesting" followed by unnesting during completion of insertion into the cartons is to accomplish the function of "moving article groups into the open ends of the carton sleeves," and not for some other function.

13. This disclosure is clear and unambiguous and does not require any special interpretation by one of ordinary skill in the art, and, if the embodiment of Figures 1-16 were the only embodiment disclosed in the '806 patent, claim 1 would be limited in literal scope to the "nesting" feature.

14. However, as stated in detail in the foregoing Findings of Facts, the embodiment disclosed in Figure 17 and described in the specification does not incorporate a "nesting" feature and claim 1, therefore, must be construed not to be limited to "nesting" in order to comply with the requirements of Section 112, last paragraph, and "be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

15. It is concluded that claims 1 and its dependent claim 13 are not limited in scope to the "nesting" feature.

16. No determination of the scope of claims 1 and 13 other than as to the "nesting" feature is involved in this case as this is the only aspect at issue, Mead having stipulated that if the claims are not limited to "nesting" the accused cartoners infringe.

17. As it has been concluded that claims 1 and 13 are not limited to the "nesting" feature, it is concluded that Mead's accused DuoStack cartoners literally infringe claims 1 and 13 of the '806 patent.

III. INVALIDITY

18. The '806 patent is presumed valid pursuant to 35 U.S.C. § 282, and Mead has the burden of proving, by clear and convincing evidence, that the '806 patent claims 1 and 13 are invalid. *American Hoist & Derrick v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 821 (1984).

19. The consideration of the issue of validity has been simplified by Riverwood stipulating that elements (a), (b), and (c) of claim 1 are all disclosed in one prior art patent, namely the Langen '959 patent and that element (d) defines a "barrel cam loader" which was known to be used in cartoners. The issues for determination then become only whether all of the elements are found in any one piece of prior art, which would render the claims invalid as being anticipated under Section 102, or whether it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the known barrel cam loader with a cartoner that included elements (a), (b), and (c), which would

render the claims invalid for obviousness pursuant to Section 103. For purposes of present consideration, the combination of the elements (a), (b), and (c), are characterized by a three stream system, one stream being an article infeed stream, a second stream being an article selecting stream, and the third stream being a carton supply stream.

A. *Anticipation*

20. Mead alleges that the Le Bras '139 patent discloses the combination of all of the elements and, therefore, renders claims 1 and 13 invalid as being anticipated. However, as stated in the foregoing Findings of Fact the Le Bras '139 patent discloses only two streams. What could be considered to be a third or infeed stream is disclosed in the '333 European Patent that is mentioned in the background of the '139 patent. However, there is no disclosure in the '139 patent of a third stream and the reference to the '333 European Patent in the statement of the background in the '139 patent is not an incorporation by reference.

21. Mead's use of an animation to show the incorporation of the infeed stream of the European '333 patent into the disclosure of the '139 Le Bras patent is given little weight as there is no disclosure in the Le Bras '139 patent that this should be done and the combination is more than physically attaching the actual disclosure of one to the other. Furthermore, it is recognized that animations can be made to present any result desired.

22. Mead also asserted that the Pillsbury machine contained a three stream system, asserting that a single

physical conveyor can constitute more than one "conveyor." It is concluded, however, that there are not three separate conveyors providing a three-stream system in the Pillsbury machine.

23. Therefore, claims 1 and 13 are not anticipated and rendered invalid pursuant to Section 102.

B. *Obviousness*

24. A patent is invalid for obviousness where the differences between the subject matter of the patent and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art" to which the patent pertains. 35 U.S.C. § 103.

25. The ultimate determination of obviousness is a legal conclusion resting on factual determinations, including the scope and content of the prior art, the differences between the prior art and the claims at issue, the level of ordinary skill in the art, and objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

26. Objective evidence of non-obviousness, commonly referred to as "secondary considerations" includes evidence of commercial success of the invention, satisfying a long-felt need, failure of others to find a solution to the problem at hand, and copying of the invention by others. *Pro-Mold and Tool Co., N.C. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1572, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996).

27. Factual findings with regard to each of the above-stated elements upon which an obviousness determination is to be made are stated in detail in the foregoing Findings of Fact.

28. The issue of obviousness here is whether or not it would have been obvious to someone ordinarily skilled in the art to substitute a barrel cam loader for an angulated fixed guide in a three-stream system cartoner.

29. Because virtually all inventions are combinations of old elements, the question to be determined in deciding the obviousness of an invention where all of the components are old is whether "there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1556 (Fed. Cir. 1985). The suggestion or motivation need not be expressly stated, however, as it is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1025, 226 USPQ 881, 886 (Fed. Cir. 1985).

30. As determined in the foregoing Findings of Fact in the present case there were suggestions in the prior art for making the aforesaid combination, including the Langen '959 and '077 patents where the same inventor first stated the invention as involving the use of a fixed guide with the prior art being described as including a barrel cam loader, and then obtaining a patent for an invention where the barrel cam loader was used in a cartoner; the Le Bras '139 patent disclosure of a barrel cam loader in a cartoner with reference

to the prior art that would result in a three-stream system cartoner; and the Pillsbury machine that was equipped to operate either with a barrel cam loader or an angulated fixed guide.

31. While generally the way in which an invention came about is not to be considered in determining obviousness, in the present case the fact that the inventors of the '806 patent first developed a cartoner that had angulated fixed guides instead of a barrel cam loader and abandoned that construction because of potential patent infringement and rather incorporated a barrel cam loader construction which they knew was used in cartoners is evidence that the inventors themselves, while not admitting it, recognized the obviousness of substituting a barrel cam loader for angulated fixed guides in a cartoner.

32. While the existence of prior art not considered by the Examiner does not weaken the presumption of validity pursuant to 35 U.S.C. § 282, it does make it easier to the challenger of validity to carry the burden of proof. *Alco Standard Corp. v. Tennessee Valley Authority*, 808 F.2d 1490, 1497, 1 USPQ 2d 1337, 1342 (Fed. Cir. 1986), *cert. dismissed*, 483 US 1052 (1987); *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 905, 225 USPQ 20, 24 (Fed. Cir. 1985), *cert. denied*, 474 US 843 (1985).

33. In the present case the Examiner was not aware of either the Le Bras '139 patent or the European '333 patent, and was not aware of the Pillsbury machine when allowing claims 1 and 13 to issue in the '806 patent.

34. The facts as found above clearly and convincingly establish that the subject matter of claim 1 of the '806 patent

would have been obvious to one of ordinary skill in the art at the time of the invention of the subject matter.

35. Claim 13 of the '806 patent depends from claim 1, which means that it incorporates all the subject matter of claim 1, and adds the following additional detail:

> wherein said activation means comprises a cam track/cam follower assembly.

This is a common structure in barrel cam loaders and adds nothing patentable. Therefore, the subject matter of claim 13 is obvious for the same reasons as claim 1.

36. The foregoing findings and conclusions of obviousness apply whether claim 1 of the '806 patent is interpreted to have fixed or extensible faces on the head of the barrel cam loader as extensible faces are disclosed in the '077 patent and are obvious for that reason. Further, this feature was not relied on for unobviousness.

37. Riverwood introduced testimony of its technical expert, Donald Thomas, to opine that the subject matter of claim 1 would not have been obvious to someone ordinarily skilled in the art at the time of the invention. However, Mr. Thomas' testimony does not overcome the clear and convincing facts of obviousness. Moreover, it is at least questionable that Mr. Thomas had a proper understanding of the meaning of "obviousness" in the context of making a determination of whether it would have been obvious for someone ordinarily skilled in the art to substitute a barrel cam loader for an angulated fixed guide loader in a known cartoner. From his testimony it appears Mr. Thomas

understood that something would be unobvious to use if one ordinarily skilled in the art would prefer to use an alternative device even though that person knew that the non-preferred device was a well-known alternative that could for one reason or another be obvious to use under particular circumstances.

38. For example, when the '959 patent (column 1, lines 51-60) states that the common practice of using a "complex escalator type mechanism" (barrel cam loader) may be undesirable because of expense and maintenance disadvantages, this is a recognition of the obviousness of the use of a barrel cam loader not evidence of unobviousness.

39. Furthermore, Mr. Thomas admitted that if there was a particular reason to do so, it would be obvious to use a barrel cam loader, such as if there was a special package handling reason, a patent infringement reason, or if one wanted to use more positive force.

40. Riverwood's patent expert, Mr. Pravel opined that a teaching of substituting a barrel cam loader in a two stream cartoner did not render it obvious to substitute a barrel cam loader in a three stream cartoner. This is not persuasive as in both a two stream and a three stream cartoner the articles are in a single stream when they are acted on by the barrel cam loader or the angulated fixed guide loader for which the barrel cam loader is substituted. Whether the articles have been another third stream before they are in the stream that arrives at the barrel cam loader or angulated fixed guide loader does not change the conditions of the articles at the loader, whether it be a barrel cam loader or an angulated fixed guide loader. Thus, the obviousness of substituting a

barrel cam loader would be as apt for a three stream cartoner as for a two stream cartoner.

41. Mead's patent expert, Mr. Banner testified that it would have been obvious to one of ordinary skill in the art to substitute a barrel cam loader for a three stream angulated fixed guide loader in a three stream cartoner. It is not his ultimate opinion that is persuasive, but the basis for his opinion, which is included in the foregoing findings of fact.

42. Mead's technical expert, Dr. Erdman, was precluded from testifying as to the ordinary skill in the art and what would have been obvious to one ordinarily skilled in the art.

43. While Dr. Erdman has impressive and commendable credentials as a professor and high-level expert in the broad field of mechanical engineering and understands the mechanical aspects of cartoners, he had no significant experience in the cartoner art nor any exposure to those ordinarily skilled in the art to determine the level of skill. Being one highly-skilled, he could well be expected to have a different level of unobviousness than one ordinarily skilled.

44. Dr. Erdman did not interview persons ordinarily skilled in the art to determine their standard of obviousness and he was not experienced in determining obviousness otherwise, never before having testified on the issue of what would have been obvious to someone ordinarily skilled in the art, which is a hypothetical person, not a natural person, having knowledge of all preexistent pertinent prior art.

45. On the other hand, a patent attorney, such as Mr. Pravel for Riverwood and Mr. Banner for Mead, has

experience in evaluating issues of obviousness by rendering opinions over years of experience and having his skills honed by direct experience in dealing with the issue of obviousness in prosecuting patent applications before the U.S. Patent and Trademark Office and in dealing with determinations of obviousness by the courts. Furthermore, patent attorneys are considered by the courts as being qualified to render expert opinions on obviousness in cases where there are issues of willful infringement and opinions of patent attorneys are recognized as being competent to be relied on by an alleged infringer with no requirement that the attorney first obtain an opinion on obviousness from someone ordinarily or expertly skilled in the art or that the attorney have any special experience in the technology of the subject matter of a patent prior to making a study of the art in relation to the patent at issue.

46. Mead presented a video animation illustrating the prior art and Dr. Erdman's combinations of the prior art. This animation was given no consideration in determining obviousness other than as an illustration in animation of what Dr. Erdman was stating in his testimony. As developed in cross examination, the animation shown to not be an accurate combination of the detailed disclosures of the prior art patents and machine and, in some cases, the animated combinations would have been inoperable.

47. Animations can be made to show anything, being mere figments of the imagination of an animator. Sow's ears can be made into silk purses and everyone has seen an elephant fly in animation. Here, an animation could as easily have been made showing the inoperability of the combination of the prior art components.

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48. It is the legal conclusion based on the facts as determined that it has been established by clear and convincing evidence that the subject matter as a whole of claims 1 and 13 of the '806 patent would have been obvious at the time the invention was made to a person having ordinary skill in the art and that claims 1 and 13, therefore, are concluded to be invalid pursuant to 35 U.S.C. § 103.

49. Applying the applicable law to the facts as stated in the foregoing Findings of Fact, it is concluded that claims 1 and 13 of the '806 patent are invalid.

50. The facts do not establish a sufficient nexus between the subject matter of the claims of the '806 patent and the commercial success of the Twin Stack cartoner to overcome the clear and convincing finding of obviousness from the prior art and the clear and convincing evidence of obviousness from the prior art clearly outweighs any significance that may result from secondary considerations otherwise.

IV. INEQUITABLE CONDUCT

51. Individuals associated with the filing and prosecution of patent applications have a duty of candor and good faith in dealing with the Patent Office, which includes a duty to disclose to the Patent Office all information known to that individual to be material to patentability. This duty exists with respect to each pending claim until the claim is canceled or withdrawn from consideration. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was

cited by the Patent Office or submitted to the Patent Office in an Information Disclosure Statement. However, no patent will be granted on an application in connection with which fraud on the Patent Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. 37 C.F.R. § 1.56. A patent is rendered unenforceable when the applicant does not comply with the duty of candor. *Paragon Podiatry Lab., Inc. v. KLM Labs, Inc.*, 984 F.2d 1182, 1190-91 (Fed. Cir. 1993).

52. Inequitable conduct must be proven by clear and convincing evidence. *Paragon* at 1189.

53. Inequitable conduct includes failure to disclose material information or submission of false material information, with an intent to mislead. *J. P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 1559 (Fed. Cir. 1984), *cert. denied*, 474 U.S. 822 (1985).

54. The determination of inequitable conduct involves a two-step analysis. First, a determination must be made whether the alleged act or omission satisfies a threshold level of materiality. Second, a determination must be made whether there is a threshold showing of an intent to mislead. Assuming that the thresholds are established, the materiality and intent must be balanced, i.e., the greater the materiality, the less showing of intent is required, and, conversely, the less materiality, the greater showing of intent is necessary, *Halliburton Co. v. Schlumbeger Technology Corp.*, 925 F.2d 1435, 1439 (Fed. Cir. 1991).

55. The threshold of intent is not met by finding of gross negligence or recklessness alone, absent culpable intent.

Appendix C

Tol-O-Matic, Inc. v. Proma Produkt-Und Mktg. Gesellschaft, 945 F.2d 1546, 1554 (Fed. Cir. 1991); *Kingsdown Medical Consultants Ltd. v. Hollister, Inc.*, 863 F.2d 867, 873 (Fed. Cir. 1989), *cert. denied*, 490 U.S. 1067 (1989).

56. As recited in the foregoing Findings of Fact, Mead relies on two alleged instances of misconduct, both involving the Langen '959 patent.

57. The first instance is the alleged mischaracterization of the '959 patent in the Information Disclosure Statement by not describing the '959 patent as disclosing a three-stream system. However, the Information Disclosure Statement did identify the '959 patent and the Examiner initialed the identification to indicate that he had reviewed the '959 patent.

58. The statements in the Information Disclosure Statement were made at the time the pending claims did not include the three-stream system.

59. Even if the statement regarding the '959 patent in the Information Disclosure Statement was a mischaracterization of the '959 patent, there is no evidence to indicate any intent to mislead the Examiner by the inventor-applicants, Riverwood or the attorney who prosecuted the application in the U.S. Patent Office.

60. The second instance of alleged misconduct was the alleged mischaracterization of the prior art in the Amendment arguments submitted to overcome the rejection of then pending claims, which by the Amendment added the three-stream system. The statements made in the Amendment remarks were directed to overcoming the pending rejection,

which rejection was based on prior art cited by the Examiner, which cited prior art did not include the '959 patent.

61. There is no authority that requires a patent applicant to review and comment on every piece of prior art that had previously been identified when attempting to overcome a specific rejection based on particular prior art relied on in the rejection, particularly where the Examiner has access to the accused mischaracterized prior art.

62. It is concluded that the evidence does not establish by clear and convincing evidence that any inequitable conduct occurred in prosecuting the patent application that resulted in the '806 patent.

63. Therefore, it is concluded that the '908 patent is not unenforceable for inequitable conduct.

CONCLUSIONS

A. Mead's accused DuoStack cartoner infringes claims 1 and 13 of the '806 patent.

B. Claims 1 and 13 of the '806 patent are invalid for obviousness.

C. The '806 patent is not unenforceable for inequitable conduct.

s/ Dalbert U. Shefte
Dalbert U. Shefte
Special Master

Date: March 9, 1998

APPENDIX D — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DENYING PETITION FOR REHEARING DATED JUNE 22, 2000

United States Court of Appeals
for the Federal Circuit

99-1274

RIVERWOOD INTERNATIONAL CORPORATION,

Plaintiff-Appellee,

v.

THE MEAD CORPORATION,

Defendant-Appellant.

ORDER

A combined petition for panel rehearing and rehearing en banc having been filed by the APPELLEE, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

Appendix D

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on June 29, 2000.

FOR THE COURT,

s/ Jan Horbaly
Jan Horbaly
Clerk

Dated: June 22, 2000

APPENDIX E — NOTICE OF APPEAL DATED AND FILED FEBRUARY 12, 1999

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

CIVIL ACTION FILE NO. 1:94-CV-90-CAM

RIVERWOOD INTERNATIONAL CORPORATION,

Plaintiff,

v.

THE MEAD CORPORATION,

Defendant.

NOTICE OF APPEAL

Notice is hereby given that The Mead Corporation, defendant in the above-captioned matter, by and through its undersigned counsel of record and in accordance with 28 U.S.C. § 2107 and Rule 3 of the Federal Rules of Appellate Procedure, hereby appeals to the United States Court of Appeals for the Federal Circuit from the Order and Judgment entered herein on January 14, 1999 granting partial summary judgment in favor of plaintiff Riverwood International Corporation and holding that claims 1 and 13 of Ziegler, et al. United States Patent number 5,241,806 are not invalid for obviousness.

Appendix E

Respectfully submitted, this 12th day of February, 1999.

KING & SPALDING

s/ Bruce W. Baber
Bruce W. Baber
(Georgia Bar No. 030050)

191 Peachtree Street
Atlanta, Georgia 30303
(404) 572-4600

MERCHANT, GOULD, SMITH,
EDELL WELTER & SCHMIDT,
P.A.

s/ Robert T. Edell
Robert T. Edell
(Admitted Pro Hac Vice)
Albert L. Underhill
(Admitted Pro Hac Vice)
Robert J. Glance
(Admitted Pro Hac Vice)

3100 Norwest Center
Minneapolis, Minnesota 55402
(612) 332-5200

Attorneys for Defendant
THE MEAD CORPORATION